

Systematic Studies of Asian *Aconitum* (Ranunculaceae) XII. *Aconitum soyaense*, a New Species of Subgenus *Lycoctonum* from Hokkaido, Northern Japan

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Aconitum soyaense, a new species of subgenus *Lycoctonum* of the genus *Aconitum* is here described from Hokkaido, northern Japan. *Aconitum soyaense* is distinguished from *A. gigas* H. Lév. & Vaniot and *A. umbrosum* (Korsh.) Kom. by having sepals and carpels hirsute with smooth-surfaced hairs, rounded conical, short-beaked helmets, elongated divaricate branches, smaller seeds, larger nectary blades and leaf blades sericeous with long, smooth-surfaced appressed hairs. *Aconitum soyaense* is restricted to the serpentine area in northern Hokkaido and is considered to be a serpentinophyte.

Key words: *Aconitum*, Hokkaido, Japan, new species, subgenus *Lycoctonum*.

In June of 2006 I was in the serpentine area of Naka-Tonbetsu-cho situated in the northern part of Hokkaido, northern Japan, to study serpentine plants. Unexpectedly I found unfamiliar plants belonging to subgenus *Lycoctonum* of the genus *Aconitum* (Ranunculaceae). Previously this area had been included in the distribution range of *Aconitum gigas* H. Lév. & Vaniot (Kadota 2006a, 2006b), but the plants were significantly different from either *A. gigas* or *A. umbrosum* (Korsh.) Kom., from Honshu, in the helmet shape and the branching mode of stem; helmets are rounded conical and their beaks are relatively short and stem well branched from the lower part with elongated, divaricate branches. After a detailed examination of these plants it is concluded that they belong to an undescribed species. Here this species is described as a new species, *Aconitum soyaense*.

***Aconitum soyaense* Kadota, sp. nov.**

[Figs. 1–2]

Haec species ab *Aconito gigate* et *A. umbroso* sepala et carpellis hirsutis, cassibus rotundato-conicis, ramis divaricatis, seminibus brevioribus, laminis nectariorum latioribus et foliis sericeis differt.

TYPE: JAPAN: Hokkaido; Soya Subpref., Esashi-gun, Naka-Tonbetsu-cho, Machine-shiri, Kikusui-sawa Gorge [44°55'N 142°11'E], alt. 95 m, a serpentine area, 17 June 2006, Y. Kadota 063028 (TNS 757737–holotype, Fig. 1), Y. Kadota 063029–063030 (TNS 757738–757739–isotypes).

A subscapose perennial herb, 70–90 cm tall. Rhizome up to 10 cm long, 1 cm in diameter, simple. Stem slender, straight, erect or slightly ascending, hollow, sparingly strigose with rough-surfaced curved hairs, 2–3 times branched from the lower part of the stem; branches elongated, divaricate. Basal leaves persistent at anthesis; blade membranaceous, reniform, 9–14 cm long,



Fig. 1. Type specimen of *Aconitum soyaense* Kadota (JAPAN: Hokkaido; Soya Subpref., Esashi-gun, Naka-Tonbetsu-cho, Machineshiri, Kikusui-sawa Gorge, alt. 95 m, 17 June 2006, Y. Kadota 063028, TNS 757737, holotype).

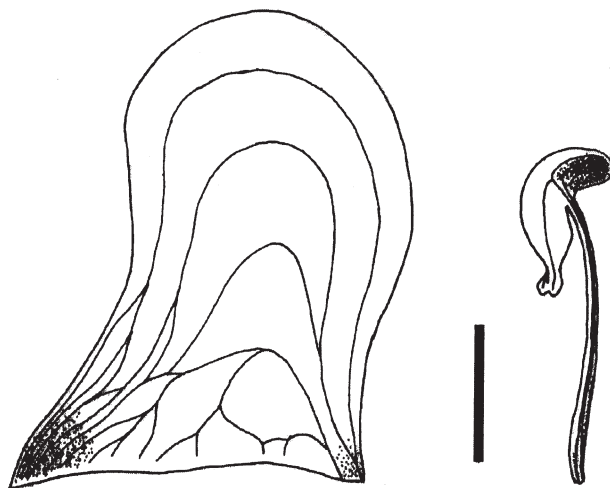


Fig. 2. Helmet and nectary of *Aconitum soyaense* Kadota (voucher: JAPAN: Hokkaido; Soya Subpref., Esashi-gun, Naka-Tonbetsu-cho, Machineshiri, Kikusui-sawa Gorge, alt. 95 m, 17 June 2006, Y. Kadota 063029, TNS 757739, isotype). Scale indicates 5 mm.

10–20 cm wide, up to 19 cm long and 26 cm wide at fruiting time, medially 7–9-lobed to 1.5–2 cm from the base, sparingly sericeous with long, smooth-surfaced, appressed hairs, ciliate along the margin, deeply cordate at base; middle lobe obovate-rhombic, 4.5–5.5 cm long, 4–5 cm wide, obtuse, coarsely dentate; teeth ovate, acute; petioles 25–40 cm long, glabrous, 4-angled, hollow. Upper cauline leaves similar to basal in shape, diminishing in size, petiolate. Inflorescence terminal, racemose, 15–20 cm long, 6–7-flowered, in indeterminate condition. Pedicels 2–4 cm long, incurved to nearly straight, strigose with rough-surfaced curved hairs and sparingly intermixed with smooth-surfaced patent hairs throughout the surface; bracteoles 0–2, linear, 1–6 mm long, ca. 0.5 mm wide, situated middle or near the base of the pedicels. Flowers in June, dull whitish yellow, 22–27 mm tall, sparingly hirsute with smooth-surfaced patent hairs; helmet conical, 15–19 mm tall, 13–17 mm wide, 15–17 mm long with short beak 2–3 mm

long; lateral sepal distorted obovate, 9–12 mm long, 6–8 mm wide, hirsute with long, smooth-surfaced patent hairs (pollen-collecting hairs) on the adaxial side. Nectaries glabrous; blade 4 mm long, 2 mm wide, not inflated and tapering to the spur; spur 2 mm long, saccate and slightly incurved; labium 1 mm long, shallowly bilobed; stipe 10 mm long, straight, erect. Stamens glabrous, anthers 0.5 mm long, filaments 4 mm long, staminal teeth absent. Carpels 3, hirsute with smooth-surfaced ascending hairs. Follicles 9–15 mm long, divergent; seeds 2.5 mm long, 2 mm wide, trigonous, lamellate across.

Other specimens examined: JAPAN: Hokkaido; Soya Subpref., Esashi-gun, Naka-Tonbetsu-cho, Machineshiri, Kikusui-sawa Gorge [44°55'N 142°11'E], alt. 95 m, serpentine area, 31 July 2006, fr., Y. Kadota (TNS).

Aconitum soyaense is distinguished from *A. gigas* and *A. umbrosum* by having sepals and carpels hirsute with smooth-surfaced hairs, rounded conical, short-beaked helmets,

elongated divaricate branches, smaller seeds, larger nectary blades and leaf blades sericeous with long, smooth-surfaced appressed hairs.

The specific epithet “*soyaense*” follows the regional name of the type locality. *Aconitum soyaense* is known only from the type locality. The type locality is included in the serpentine region of the northern part of Hokkaido. Hence *A. soyaense* is considered to be a serpentinophyte. In this area other serpentinophytes also occur (e. g., *Aconitum ito-seiyanum*, *Achillea ptarmica* subsp. *macrocephala* var. *yezoensis* and so on).

門田裕一：アジア産トリカブト属植物（キンポウゲ科）の分類学的研究 XII. 北海道産レイジンソウ亜属の1新種，ソウヤレイジンソウ

北海道中頓別町からトリカブト属レイジンソウ亜属の1新種，ソウヤレイジンソウ *Aconitum soyaense* Kadota を記載した。ソウヤレイジンソウは道内に普通に見られるエゾレイジンソウ *A. gigas* H. Lévl. & Vaniot や本州のオオレイジンソウ *A. umbrosum* (Korsh.) Kom. と次の点で異なっている：①萼片に滑面開出毛がはえる，②心皮あるいは袋果に滑面斜上毛がはえる，③上萼片（かぶと）は円頂の三角形で，嘴が短く，トリカブト亜属の上萼片に似る，④茎がよく分枝して，枝は開出し

I wish to show my sincere thanks Mr. Kenji Horie, Asahikawa Nishi Senior High School, Asahikawa, Hokkaido, who kindly guided me to the Kikusui-sawa Gorge, the type locality of *Aconitum soyaense*, and assisted my field examinations in Hokkaido.

References

- Kadota Y. 2006a. *Aconitum* L. In: Iwatsuki K., Boufford D. E. and Ohba H. (eds.), *Flora of Japan* 2a: 267–285. Kodansha Ltd., Tokyo.
—— 2006b. Ezo-Reijinsô-to-Ô-Reijinsô. Hoppô-Sansô (23): 105–114 (in Japanese).

て伸長し，⑤種子が長さ2.5 mm と小さい，⑥花弁の脰部が長さ4 mm，幅2 mm とより大きい，⑦葉の両面に長い滑面伏毛がある。

ソウヤレイジンソウは今のところ幌延町と中頓別町の町境に位置する知駒岳東面の掬水沢（菊水川）にしか知られていない。掬水沢の産地は蛇紋岩地域で，本種は蛇紋岩植物の一つと考えられ，周辺にはセイヤブシやホソバエゾノコギリソウなどが生育している。

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